

Investigating the relationship between productivity improvement and information technology implementation of employees of industrial management organization

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Abstract: The present study has examined the relationship between the information technology implementation and information technology improvement in Tehran industrial management organization. This research is based on descriptive method. The data gathering tool is the questionnaire, the validity of the questionnaires by using of factorial analysis have been approved and its reliability was evaluated by using of Cronbach's alpha coefficient. The case-study statistical population in this research is the employees of Tehran industrial management organization. With regard to the limited population sample size of research was selected in terms of the Cochran formula method equal to 173. For data inferential analysis, multivariate regression method was used by using of SPSS software. The results show that there is a positive and significant relationship between the personnel productivity improvement and information technology implementation and also among the factors; the incitement productivity improvement and innovation have the greatest relationship with information technology implementation.

Key words: Innovation; Productivity and information technology implementation

1. Introduction

Today, importance of information is discussed either as an important tactical and strategic source in an organization and it has been known as a major source of value added as well. The information has always been regarded in the business environment as a competitive advantage. But the important point is that real changes can increase the potential value of information, the organizations' ability in using of this important resource is through the new technology application. The information technology with features like storage, processing, marketing and data transfer can assist managers in improving the organizations performance. In the other hand, the importance of productivity and necessity to review it with regard to expanding of competition levels, technological complexity, and variety of tastes, lack of resources and the data transfer speed is not hidden for anyone.

The impact of information technology on productivity has been discussed as the arguable major issues in the economy in the 1990s. In terms of theoretical and experimental, many studies have been conducted in developed countries and developing countries (Mahmoodzadeh, 2011). The main features of the present age, is information and turn it into knowledge. Such feature will have large impact on the social and economic institutions, if a social institution also based on it, changes their structure and rebuilt it. In fact, can be stated that information technology has increased the ability of organizations and with knowledge and human

rationalism and its ideas, in order to exploit of thought and the repetitive affairs assignment and non-creative into machines and as well as in crease of efficiency and release of human skills, has been paid attention in recent years (Eshlaghi and et al, 2011).

The information technology has influenced all of functions at all organizational and social levels and lead to fundamental changes in all life aspects especially business and possibility of the information efficient and useful made it possible (Fanni and Mosleh, 2007). This technology is discussed with increase of the information exchange process and reduce of the business costs, as a means to increase productivity, efficiency, competitiveness and growth in all human activity areas. In general, the productivity is a factor that would guarantee the survival of the organization in today's competitive world (Hatami and et al, 2011). The implementation of information technology in organizations made to improve of employees productivity, which in turn leads to better respond to customer and employee and manager training is an essential action in this field. Therefore the organizations by using of the information technology are seeking of creating more value added, more customers and citizens attraction, promote of organizational productivity and efficiency and with regard to the wondrous and undeniable impact of information technology on organizations, today, with applying of which has become to imperative and inevitable issue (Fanni and Mosleh, 2007).

2. Information technology and information systems:

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The information system can be considered as a set of techniques and tools which are applied in optimizing of the information technology and organization activities support on the axis of the information and knowledge. The information system is a complete system for the intended objectives. This definition, do not limited or obliged the information system to have components, such as human, car and etc., because an information system may be can to play its complete role without any of these components. From a technical perspective, an information system can be defined as a part of the interconnected components that is used for

gathering, processing, maintaining and dissemination of information to assist in decision-making and control in the organization (Lucas, 2000).

An information system is conducted three major activities (Fig.1). First, it receives the information from inter-organizational or intra-organizational resources as an entrance. Then based on the received information is doing the things to produce the system intended information. Finally, the produced information is involved in hands of the intended user, for example a manager or an employee (Fanni and Moseh, 2007).

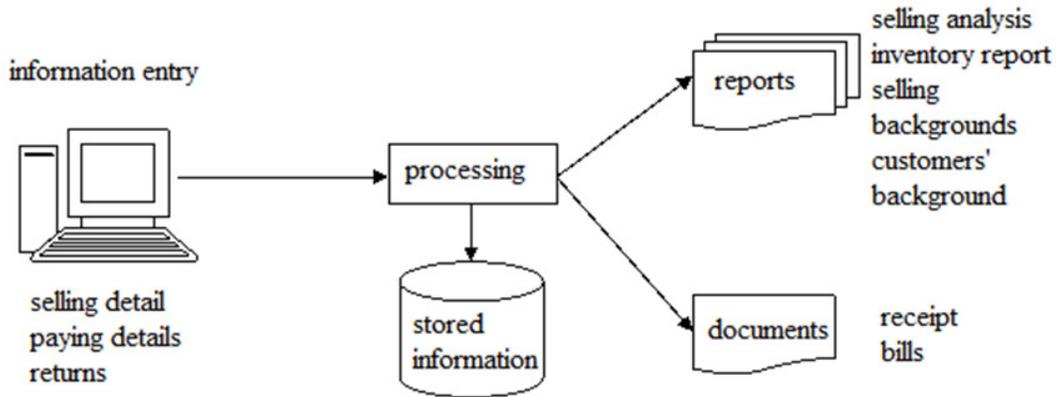


Fig. 1: Main activities of an information system

From Lavden perspective, the information system in terms of the organizational level is divided into six categories (Table 1).

Table 1: Six categories

Types of Information System	Organization Level
Transactional Process System	Organization operational level
Office Automation System	Organization operational level
Knowledge Work System	Information experts level
Management Information System	Middle Management level
Decision Support System	Middle Management level
Executive Support System	Top Management level

3. Implementing and applying of information technology (IT)

The applying and implementing of information technology (IT) in organizations is not a generic prescribed version and can't be implement and run with a comprehensive plan of information technology for all companies and organizations, with IT structure. The most important factors in the implementation of information technology (IT) in any organization should be considered are as follow:

1- Culturing: The cultural bed in any organization is necessary to successful implementation of information technology (IT).

2- The belief of organization's senior managers: Whatever the organization senior managers to pay attention IT as an integral concept towards of self (its) organization, the success of its implementation will be quicker and greater. The information

technology (IT) is as a razor surgery that if it is in throat of the organization manager, it would be more subtle. In this way, the belief and confidence of the managers to future is the most effective factor in the success of IT utilization.

3- Identifying of damages: The problems and barriers of applying and implementing of information technology (IT) in the organization must be accurate and scientific have investigated and planned.

4- The tendency towards of the process structure: The organizations structure related to information technology (IT) should be exit in terms of responsibilities structure and lead to the process structure.

5- The involvement all of organization staff in IT issue: All of the organization members of senior manager to operational level employees should be considered as IT experts.

6- The improvement of productivity indices: The productivity indices measurement in the organization should be to growth towards of the improvement and should be used of the information for turn it into the knowledge.

7- Downsizing: Removing unimportant activities from organization environment, which is called "Downsizing", is considered as national necessities (Brynjolfsson, 2010).

4. The obstacles of applying information technology (IT) in the organizations

The extent technology of a nation is in accordance with average of ability and knowledge of that nation. And should not be forgotten this issue that the purpose is in the technology growth, the life level promotion and the society members education and expansion of the strong and extensive domestic market and otherwise, this consumer compatibility with the state existing environment, would be real justification for new technology. Lack of the manager's knowledge in the field of information technology to prevent the acceptance of this technology in organizations. However, the main obstacles in the development of IT in any organization can be explained as follows (Maloon and et al., 2011).

1- Top-Managers: Most of the top managers do not understand enough the role of IT. These people do not began the integrated approach and against of the proposed integrated are resistant due to fear lack of ability in process understand and its control. If they have literate about the subject, may have a new subjective. But its background compared to the organization or company is not based on the information age.

2- The employees of IT department: These people just do not understand the information needs related to the managers and they are only interested in technology. The IT experts do not have preparation of support or participation in corrective (Reform) approaches based on information.

3- The other operational employees: The dominant distinctive of the employees is that they have little understanding of strategic of information, but can be divided them into two groups:

- A group that has no computer literacy and feel a threat through IT and the culture related to it. These groups of employees due to its fear are resistant against any kind of reforms of information age.
- A group that has computer literacy, without paying attention to the urgent need to establish coordination between them, they want to pursue their own program. These people are not willing to uplift its attempts in the form of more comprehensive reform program and therefore they are seeking to weaken any organizational attempt with integrated approach toward of the information age reforms.

4- Lack of financial resources and the lack of priority in capital allocation: Applying of IT needs to

investment and necessary budget allocate from interest of companies and the organization. The need of major investment in the field of IT is including of deterrent issues in the informational and communicating new technologies spreading in the organizations.

5- Lack of cooperation between the research and development units.

6- Training and inappropriate infrastructure (Tylor et al., 2013).

4.1. Definition of productivity

The word of (Productivity) is an English word that is the meaning of production power, fertile and being productive. The Europe Organization of Economic Cooperation, in the year of 1950, has discussed the more complete definition of the productivity as follows: The productivity is a part of obtained division to value one of the production factors that in this way can be named as capital productivity, raw materials productivity and... .

"Esther field" defined the productivity as the ratio of production system output to used amount of one or a few factors as production. "Steiner" defined the productivity as the performance measure or the existing ability to produce of the goods or service. "Sigel" defines the productivity as the ratio of between output and input related to clear and specific production operations (Soleimani roozbahani, 2010).

The intelligent use of the resources with involved of goods production and more services and with better quality, is called "Productivity" that is explained with below definitions.

- Doing the right work with proper method;
- Efficiency as well as effectiveness in work and life;
- The optimum use of resources to produce of goods and greater and better services.

In view of theory, the productivity is as follow an idea for creating-value and to efficient of the human efforts in the society or in the organizations in order to access to better life and more appropriate work quality (Pinda and Copenco, 2001).

4.2. The productivity components

The productivity is a criterion for activities evaluation, since those human activities can not to be considered without objective and goal, when we spoke about the productivity, is the measurement of every activity in connection with the aim of doing of that activity. Therefore this issue should be investigated from the quite separate two angles. On one hand, the role of useful and effective of activities to achieve the target must be questioned and on the other hand the activities efficiency is considered therefore must be said that the productivity has two components:

4.3. Efficiency

The ratio of obtained actual output to the standard output and determined (expected) is called "Efficiency". And in fact the ratio amount of work that is done compared to the amount of work must be done.

Efficiency means "Doing right things" and the aim is to optimize the use of resources. Efficiency has regarded to slightly increase of the goods production and services provide. In the other hand, efficiency means "ability to obtain more output from less data (Good working)". The assessment of performance efficiency is being carried by measuring of the amount and resources cost in relation to fulfilling of the objectives that have been used to compare of the output with the inputs.

While the way of using and utilizing of the resources to achieve of the desired results, is related to efficiency. In other words, the efficiency has quantitative aspect and the effectiveness has qualitative aspect. Effectiveness is considered as the adaptation of obtained results of the doing work (Production of goods/services provide) with the intended objectives and the beneficiary satisfaction. In fact, the effectiveness is degree and the amount of the achievement to the pre-determined objectives.

Effectiveness contrary to efficiency measures the manner of objectives realization. This scale is determined the qualitative and quantities of the conducted production and services and defines whether set of inputs and or resources to achieve the intended objectives to be optimize or not. Peter Deraker interprets the productivity as doing the right thing to the right way; So that the purpose of doing the right thing is the same effectiveness or dynamic flexibility in the goals and purpose of the right method is the same efficiency or continuous improvement.

5. The role of human resources management in productivity:

The organization in definition is a system in which a group of people to achieve of common objectives and pre-determined, awareness and regularly participate with each other. Every organization has its own special structure which includes all of characteristics and obvious features that forms the behavior members of the organization, if an organization wants to continue its activity in an dynamic environment, its human resources must be growth and develop in sustainable conditions, therefore if to human pay attention more than the other factors, the achievement will be greater to the productivity promotion, because it is only the human that with increase to motivation can to promote the quantity and quality of its work.

Each person has its special features, in other words its differences in the form of needs, interests, motives, attitude, personalities and individual training must be studied. These individual differences have close relationship with many of the personnel activities, the selection of personnel with

the needed skills, pay wages to employees with higher performance, promote of talent employees and setting of the educational programs (Fousekis, 2013).

The individual difference is determining of this issue that what people are appropriate for organizational different roles. What rights should be paid to them and what educational activities is necessary; Therefore all of the human resources activities are includes of individual differences, determine of the objectives and the results evaluation and can create the excellent opportunities to improve of human resources and organizational productivity, so it is the duty of managers and especially human resources managers that with identifying, education and training of human resources take step to achieve the organizational objectives. Human Resources management in terms of various layers in it, is very more complex than the raw materials management or financial management. The managers must decide that which one of the characteristics and individual differences influences on the person future.

Productivity can be define as effective use of human resources and financial. Although human resources management can't have direct interference in how use of other resources in the organization, but with regard to the presence and intervention of the human resources agent in all of the scenes and the organizational dimensions, human management can be designed with programs and systems for employing of the organization qualified forces, to play an important role in survival and efficiency of the organization.

In line with the employing and maintaining different forces of efficient and competent and qualified in the form of strategies and policies that lack of attention to it, will bring the horrible consequences in the long term, managers and specially human resources managers with regard to the resources limitation, must pay special attention to selection processes, attraction, selection, education and development of the human resources show competent themselves, because the competent and efficient employees are considered as the main capital of any organization (Arabi, 2006). The operational task of human resources managers is identifying and following of it, to provide of conditions that moreover blooming and activate of their potential talent based on their individual differences, can be strength to the amount of its fidelity to the organization (The same source).

6. Effective factors on increasing productivity of human resources

There are different comments in determining factors affecting on efficiency and each of scientists and experts have identified factors as effective factors and briefly such factors like continuous professional training for managers and employees, motivation among employees to work better and more, create appropriate field for ingenuity of

managers and employees, establish a proper system of payment based on performance, establish punishment and reward system, consciousness and social discipline, evolution of systems and methods that have key roles, strengthening rule, dominance of corporate policies on matters and savings as a national duty are effective in efficiency.

But all authors of this field almost agree that only a specific cause cannot be provided to increase efficiency, but they say that improving efficiency is combined effect of various factors (Emami meibodi, 1999).

- A) Correct behavior and action of leaders and managers: great responsibility for management and leadership should be given to people that imply having certain personality traits, practices appropriate leadership and management ways and be exemplifying morally.
- B) Providing necessary conditions for career advancement of all people: Human can enhance quantity and quality of his work by increasing motivation.
- C) In-service training courses and training staffs: in-service training courses and training staffs should be considered as a vital and continuum affair, because staffs' attempts can be match with available facilities just by training. All duties, instructions, rules should be clear for staffs and they don't be ambiguous.
- D) Enough authorize to staffs and increasing amenability: efficient and expert people should be absorbed in employment. Oral and written tests are necessary for selecting them.
- E) High quality of working life: meaning of working life presents importance of respect people in their working environment. Briefly it can be said that following cases improve quality of working life:
 - 1- Adapted and square payment for well performing duty;
 - 2- Safe condition of a work;
 - 3- Learning possibility and use of new skills;
 - 4- Creating social solidarity in organization;
 - 5- Preparing facilities to increase and progress staffs;
 - 6- Protect individual rights;
 - 7- Balancing work time and allowed idle time;
 - 8- Creating job and organizational pride;
- F) Use of job rotation, job enrichment and job enlargement in order to increase capacity and skills of staff
- Job enrichment means vertical develop of job that will be achieved by adding higher activities and skills and delegating in greater responsibility.
- G) Establishing appropriate payment system based on performance and establishes a system of reward and punishment: fair punishment and reward system in organization is affecting cultural factors on organizational performance; it means organization makes a difference between efficient and non-efficient human power.
- H) Strengthening consciousness and social discipline that is a self-control factor: improve productivity requires planned and comprehensive

attempt by people and authorities that need to improve working conditions, change drives, motivation techniques of staffs, improve systems, rules, circulars, instructions, methods and technologies, etc. (Ghavidel, 2008).

7. The relationship between information technology and productivity

Information Technology has many advantages and benefits for organization and has an undeniable role in speed of work, speed of data collection, decisions and management. But beside benefits, if we miss it, it has disadvantages and adverse effects of human and its reason is decreasing friendship, intimacy and elegance in working environment. So to address adverse effects of Information Technology on human dimension, it is better to following cases be used: strengthen communication through daily face to face meetings; team work by use of Information Technology; doing part of work without use of Information Technology; holding friendly and family meetings and gatherings for employees in holidays; capacity building for families to compensate failure of information technology in family; establishment advisory services centers for study human social relations and resolution human failure of workplace; governing meeting management at work.

8. History of literature

A research by Hatami et al. (2011) entitled "Relationship of quality of work life with organizational commitment and employee productivity at Medical Sciences University of Jahrom", the main objective of this research is determining relationship between quality of work life and organizational commitment and productivity of employees of Medical Sciences University of Jahrom. Results showed a significant and positive correlation between quality of work life and organizational commitment and employee productivity of Medical Sciences University of Jahrom.

A research by Bordbar and Konjkav monfared (2011) entitled "explains affecting factors on employee's productivity of Gas Company of Yazd and provides necessary tasks (fuzzy approach)", this research is Applied and analytical-survey. The findings show that innovation, learning and management factors have first to third grades respectively, if motivational, cultural and environmental factors are at next rank.

Mahmoudzadeh (2009) has considered impact of Information and Communication Technology (ICT) on economic performance of countries from 1990 decade, in a study entitled "Effects of ICT on productivity of all production factors of Iran". Total productivity of factors of production is of the most discussed variables. ICT can be effective on total productivity by infrastructure, users and overflow ways. Also, causal relationship is confirmed

on total productivity in short term and long term from explanatory variables.

A research by Mazidabadi Farahani (2005) entitled "researching effect of Information Technology on empowerment of employees", this research has researched impact of information technology on empowerment of employees from the perspective of managers, workers and experts of social security of Qom. Statistical society included all managers and workers of social security of Qom. Data will be gathered by questionnaire in this research. Results of research showed that applying Information Technology in social security of Qom has empowered staff's work in organization.

According to Atkinson and McKay (2007), Information and Communication Technology effect on total efficiency in three ways: outer effects of network; improving complements with accepting ICT and improving access to knowledge. Positive effects of every above said factor on efficiency are complained with delay. ICT can create network effects by connecting all phone subscribers to phone network that it will reconcile all operators. Nonetheless, creating valuable networks for staffs needs to time and this process won't be out of problem. For example, it is possible that variable used technologies isn't appropriate and don't be connected. This is true about organizational changes that often are cost, time waste and won't be succeed. Also, accessing data has these problems. All ICT's aren't approved by operators and it is possible that operators face to difficulties for achieving data in using them.

A research by Gerj and Irani (2004) entitled "use of Information Technology by staff of promoting section in extension cooperative of Florida", this study showed that use of e-mail and presentation issue and statistical software are three main areas that experts are familiar with it and use them in their working environment. Also findings showed that due to rapid changes in agricultural sector, extension staff should also change presenting way of Promotions findings and use of Information Technology to facilitate dissemination of routines Information and communication.

9. Research method

This study is an applied research the objective, correlation in terms of methodology, survey descriptive in terms of methodology and the nature and methods of dealing with attitudes. Also, this method is based on statistics in term of understand, describe, analyze, valuation and verify collected data.

9.1. Research hypothesis

9.1.1. Main hypothesis

There is a significant relationship between implementation Information Technology and improve employee productivity

9.1.2. Sub-hypothesis

- There is a significant relationship between implementation Information Technology and innovation factor.
- There is a significant relationship between implementation Information Technology and cultural factor.
- There is a significant relationship between implementation Information Technology and motivation factor.
- There is a significant relationship between implementation Information Technology and management factor.
- There is a significant relationship between implementation Information Technology and educational factor.
- There is a significant relationship between implementation Information Technology and individual factor.
- There is a significant relationship between implementation Information Technology and environmental factor.

9.2. Statistical community of research

Statistical community of this research includes staff of Industrial Management Organization.

In this study, as regards target population is limited (315 people), sample size was obtained 173 people using Cochran sampling formula.

9.3. How to Collect Information and Data (Primary and Secondary)

Data collection method: A questionnaire was used to collect data. 8 index of productivity human resources, including motivation, creativity and innovation, spirit of competitiveness, reducing cost of activities, improving quality of activities, reducing time work, job satisfaction and morale of workforce were identified for preparing questionnaire of productivity based on study theoretical foundations and history of literature and exploratory interviews and considering them, affecting factors on improvements employee's productivity have been detected and theoretical model of research was developed. These factors include motivation, creativity, education, work environment, effective cultural factors, management factors and individual factors.

Reliability credit and validity of test: Reliability of productivity component using Cronbach's alpha has been 0.749 for innovation factor, 0.885 for cultural factor, 0.622 for motivation factor, 0.773 for management factor, 0.91 for individual factor, 0.891 for environmental factor, 0.881 for educational factor respectively. Reliability structure of test is

researched by operative analysis. Total percent of specified variance for four factors is equal to 0.338, so this test studies 34 percent of structure. On the other hand, this tests impregnant of 34 percent of variance of adjective.

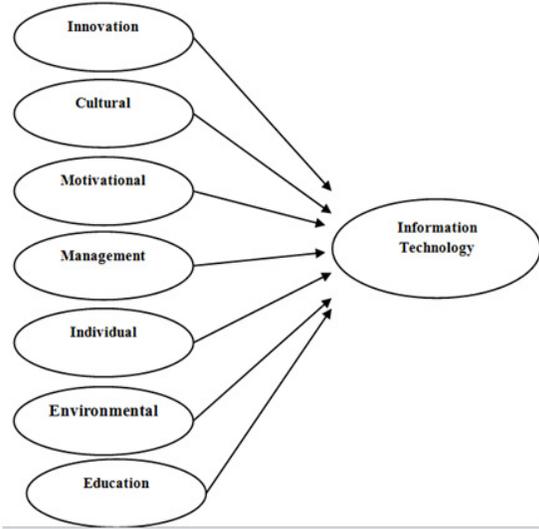


Fig. 1: Model of Research

10. Findings

Correlation statistical method and regression analysis was used to analyze research data.

10.1. Check assumptions of linear regression

10.1.1. Distribution of errors (residuals) should be normally distributed

Standard normal curve of errors should be observed to check this assumption. In normal distribution mean equal to zero and standard deviation equal to 1. If errors are not normally distributed, logarithm of variables will be used in place of variables.

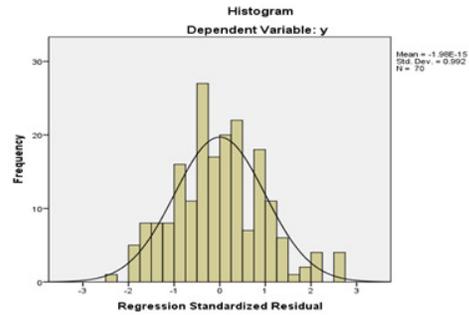


Fig. 2: Normal diagram of error standards

Regression can be used according to histograms diagram and normal distribution of dependent variable.

10.1.2. Correlation itself between errors

If Durbin-Watson Statistic is between 1.5 and 2.5, H0 will be accepted. It means regression is useable. Dependent variable with a time periods (previous year) will place into the model to remove correlation itself or the first differences of all variables will be used.

- Lack of correlation between errors: H0
- Correlation between errors: H1

Table 2: Results of Durbin-Watson Statistic of model

Variables of model	R ²	Durbin-Watson Statistic
Information Technology and improve productivity of staff	0.86	1.77

As regard Durbin-Watson Statistic is 1.77 and is located between 1.5 and 2.5, so correlation will be rejected between the errors.

10.1.3. Colinerity

Relationship between independent variables together can be examined to check linearity. Because apparently coefficient of determination be high and appropriate and shows spurious regression. Therefore it is necessary to test linearity test.

10.2. Multicolinearity

There isn't Colinerity (There is no internal solidarity): H₀
 There is Colinerity (There is internal solidarity): H₁
 Whatever tolerance of variables is more, regression is better. Whatever variance inflation factor (VIF) is greater, regression is inappropriate to predict

Table 3: Results of researching multicollinearity

Variables	Tolerance	Variance inflation factor (VIF)
Information Technology	0.960	1.041
Efficiency	0.989	1.011

In general, VIF should not be more than 4 and VIF<2 indicate incomplete of Multicolinearity. Thus, according to obtained results in above table null hypothesis is confirmed. It means assumption of linearity is rejected. Also, residuals scatter diagram

against predicted values by regression model shows absence of linear of obtained regression model.

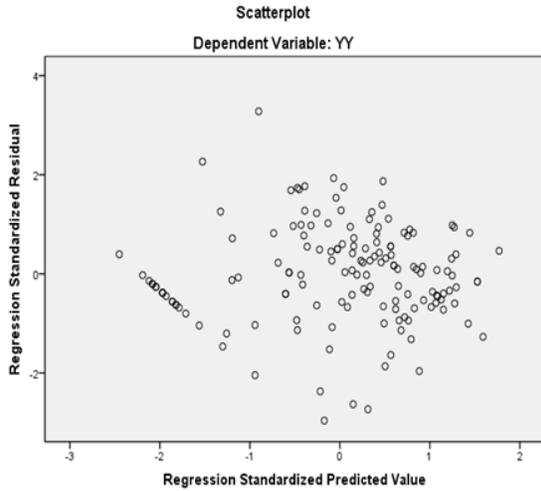


Fig. 3: residuals scatter diagram

10.3. Hypotheses of Research Test

We tested hypothesis of research by use of T-student test and Spearman correlation coefficient and significant β regression test. In T-student test, meaningful or meaningless independent or

dependent variable is obtained and size and type of relationship between independent or dependent and variables significant β regression test is estimated using Spearman correlation coefficient. Coefficients of independent variables are estimated as linear.

10.3.1. T-Student Test

As noted above, T-student test can be used to test hypotheses that know mean of population, equal or smaller than a certain number also, it is applied in test of hypothesis for comparison mean of two populations. After placing results of questions relating to above hypothesis in SPSS software and analysis and according to T-student way, test statistic is calculated and decision will be made to accept or reject the hypothesis. However, as regard size of statistical sample is greater than 30 populations is assumed normal. Results of T-test for above hypothesis are given in Table 4.

Table 4: Software output of T-test

Variable	Number of samples	Mean of samples	Standard deviation	T-statistic	Sig
Information Technology	70	3.97	0.39	72.77	0.000
Components of Productivity	70	2.246	0.52	60.250	0.000

Significant level of model is (95 percent) and level of error is (that 0.05), as it can be seen from above table, Sig amount is smaller model of error level (0.05 > 0.00); therefore, hypothesis of H0 (no relation) is rejected and hypothesis of H1 (with relation) is accepted (naturally T-statistic model also confirms this issue because its value is equal to 72.771 that if absolute value of estimate T-statistic model is greater than 1.96, it indicates rejection of hypothesis of H0 and approval of H1). On the other hand, main hypothesis of research is confirmed.

10.3.2. Estimating spearman's correlation coefficient:

Spearman correlation coefficient shows relationship of independent and dependent variable. As you can it in table below.

Table 5: Correlation coefficient between variables

Correlation coefficient between two variables	0.475
Sig. (2-tailed)	0.018

Significant level of model is (95 percent) and level of error is (that 0.05), as it can be seen from above table, Sig amount is greater than error level (0.05 > 0.018); therefore, hypothesis of H0 is rejected and hypothesis of H1 is accepted. It means according to Spearman's correlation coefficient, there is a significant relationship between components of productivity and factor of Information Technology.

10.3.3. Estimating Significant of β Test in Linear Regression:

According to confirming above hypothesis by previous tests, significant of β test in linear

regression can be used to determine importance coefficients of independent variables in this section. Information of estimating this test for hypothesis of researches has presented in the following table:

Statistical hypothesis of this test for hypothesis is as follows:

$0 = \beta$: H0 There isn't a significant relationship between components of productivity and Information Technology.

$\neq 0$: H1 There is a significant relationship between components of productivity and Information Technology.

Result of statistical analysis data of following table in order to test above hypothesis. questionnaires by SPSS software is presented in the

Table 6: Results of significant test coefficient β

Component	R ²	Level of error	Sig	Calculated coefficient β	Result of tests
Innovation	0.89	0.05	0.014	1.51	H ₀ -rejected
Cultural	0.76	0.05	0.011	0.88	H ₀ -rejected
Motivational	0.74	0.05	0.000	1.61	H ₀ -rejected
Management	0.71	0.05	0.000	1.27	H ₀ -rejected
Individual	0.81	0.05	0.000	1.18	H ₀ -rejected
Environment	0.77	0.05	0.003	1.39	H ₀ -rejected
Educational	0.75	0.05	0.000	0.98	H ₀ -rejected

Significant level of model is (95 percent) and level of error is (0.05), as it can be seen from above table, Sig amount is smaller than error level (0.05>0.014); therefore, hypothesis of H₀ is rejected and hypothesis of H₁ is accepted. It means according to significant of β test, there is a significant relationship between components of productivity and Information Technology. Also, important point that is resulted by estimating this test is β coefficient or size of impact and importance of independent variables (components of productivity) Information Technology. β coefficient of components of productivity is estimated equivalent to 1.61 by use of this test which indicates that role of "motivated"

variable and parameter on Information Technology is more than other components.

10.3.4. Analysis effects of independent variables (productivity) on information technology using stepwise regression:

Entering order of variables into equation, so that each variable has the highest impact on dependent variable (Information Technology) in Spearman method, it is as independent variable at first, next a variable enters that is diagnosed in the second position to influence in Spearman method.

Table 7: Results of analysis stepwise regression

Step	Variable	Value of t	Standard deviation	Coefficient	R ²	Sig
First	Constant number	4.84	1.329	4.29	0.592	0.000
	Innovation	5.46	0.077	0.641		0.000
Second	Constant number	3.41	1.132	3.88	0.609	0.000
	Innovation	7.48	0.089	0.633		0.000
Third	Cultural	4.32	0.342	0.618	0.619	0.000
	Constant number	4.91	1.321	3.12		0.000
	Innovation	3.19	0.145	0.596		0.000
Fourth	Cultural	3.85	0.117	0.534	0.701	0.000
	Motivation	2.99	0.169	0.480		0.007
	Constant number	8.121	1.342	3.225		0.000
	Innovation	5.841	0.560	0.621		0.000
	Cultural	2.655	0.432	0.563		0.000
Fifth	Motivation	3.171	0.441	0.434	0.708	0.008
	Management	2.487	0.093	0.474		0.000
	Constant number	7.91	1.311	3.01		0.000
	Innovation	5.743	0.598	0.581		0.000
	Cultural	2.655	0.432	0.563		0.000
	Motivation	3.423	0.231	0.434		0.000
Sixth	Management	2.487	0.423	0.476	0.710	0.000
	Individual	2.487	0.233	0.489		0.000
	Constant number	8.121	1.342	3.225		0.000
	Innovation	5.841	0.560	0.621		0.000
	Cultural	2.655	0.432	0.563		0.01
	Motivation	4.171	0.231	0.434		0.000
	Management	3.467	0.123	0.468		0.000
Seventh	Individual	2.890	0.313	0.481	0.729	0.03
	Environmental	2.99	0.093	0.489		0.000
	Constant number	8.121	1.342	3.225		0.000
	Innovation	5.841	0.560	0.621		0.000
	Cultural	2.655	0.432	0.563		0.000
	Motivation	2.171	0.331	0.742		0.01
	Management	2.97	0.093	0.568		0.000
	Individual	3.73	0.320	0.458		0.02
Environmental	4.44	0.215	0.500	0.000		
Educational	3.87	0.13	0.461	0.000		

This will continue as long as entering a new variable is statistically significant. So, analysis step wise regression showed significant independent variables on Information Technology.

$$\text{Information Technology} = 3.255 + (\text{innovation}/0.621) + (\text{cultural}/0.563) + (\text{motivation}/0.742) + (\text{management}/0.568) + (\text{individual}/0.458) + (\text{environmental}/0.5) + (\text{educational}/0.461)$$

11. Conclusion

As the results of this research show, as regard employees and managers agree to use information technology to increase productivity of an organization, productivity of organization will increase with application of information technology in organizations and training to managers and employees. According to carried out research, there is significant correlation between improve factors of efficiency and implementation Information Technology. Motivational factor obtain the highest correlation. As whatever people have a greater incentive to their work, as result they will be more willing to implement Information Technology. Next, innovation variables factor has highest relation among factors, as whatever people have a greater innovation, they show a greater willingness on implementation Information Technology. Also, among other factors management, cultural, environmental, educational or personal agent have respectively had the greatest impact on implementation Information Technology.

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